USSR UDC: 539.4:624.011

GORDIYENKO, P. I., SHABLINSKIY, G. E.

"Some Problems in Scale-Model Studies of the Earthquake Resistance of Structures"

V sb. Modelir. stroit. konstruktsiy (Modeling of Structural Elements--collection of works), Moscow, Stroyizdat, 1971, pp 65-71 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V871)

Translation: The paper deals with problems of setting up scale-model studies of the seismic resistance of large structures typified by high concrete dams. In these cases, an increase in the dimensions of the model does not give the researcher any appreciable advantages from the standpoint of improving the accuracy of an experiment, but only makes the research considerably more complicated and expensive. In order to make small-scale models, development of special materials with low modulus of elasticity and high specific weight was required. The article reports on various methods of modeling a seismic load, and on equipment used in measurements on models. Authors' abstract.

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USSR UDC: 621.316

GORDIYENKO, A. G., GUBERNATOROV, O. I., PIVOVAR, V. T., and PIVOVAR, R. M.

"Broad-Band Nuclear Magnetometer With Limited Accuracy of Magnetic Field Intensity Measurement"

Leningrad, Priborostroyeniye, No 2, 1972, pp 21-25

Abstract: The broad-band magnetometer, which uses the phenomenon of nuclear magnetic resonance as its basic operating principle, is widely used in modern particle accelerators and in nuclear-magnetic and electron-paramagnetic resonance spectroscopes for measuring the intensity of the magnetic field. This article describes a highly sensitive nuclear magnetometer with proton sensors and a self-oscillator in the form of a digital frequency synthesizer with automatic phase-frequency control and a highly stable reference oscillator. The device has been designed for continuous measurement of magnetic field intensities ranging from 1.2 to 6.5 kiloersteds. Block diagram of the self-oscillator, which has a frequency range of 5-28 MHz tunable with minimum steps of 10 Hz in five channels, is given and its operation described. The authors are connected with the Kharkov Institute of Radio Engineering.

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USSR UDC 621.396.62:621.396.97

GUBERNATOROV, O. I., PIVOVAR, V. T., PIVOVAR, R. M., GORDIYENKO, A. S., TSYBUL'KO, V. I.

"A Medium-Band Radio Receiver With Digital Frequency Synthesizer"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 12, pp 16-21 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D11)

Translation: The paper describes a transistorized socket-powered relay receiver with fixed tuning and double frequency conversion designed for huntless and adjustment-free reception of one hundred radio stations in the medium-wave band. Rapid and accurate tuning of the receiver is achieved by using a digital frequency synthesizer as the heterodyne. Tuning precision is ensured by the high stability of the heterodyne, which is determined by the stability of a quartz-crystal reference oscillator. Resumé.

USSR UDC 621.373

GUBERNATOROV, O. V., PIVOVAR, R. M., PIVOVAR, V. T., GORDIYENKO, A. G.

"Code Control of a Digital Frequency Synthesizer"

Pribory i sistemy avtomatiki. Resp. mezhved. nauchno-tekhn. sb. (Devices and Systems for Automation. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 102-105 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D398)

Translation: The article describes the control circuit for a digital frequency synthesizer which operates in the 30 MHz range with discrete intervals of 50 kHz. Control is by five-digit parallel binary code. A block diagram of a frequency divider is given with division coefficient variable from 38 to 68 and programmed setting of this coefficient. The maximum frequency of the divider is 3.5 MHz. An advantage of the described digital synthesizer control circuit is absence of the mechanical inertia of switches which would increase the time for switching of the synthesizer channels. One illustration, bibliography of three titles. Resumé.

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USSR

UDC 669.295.5:621.785.014:539.4.015.1

GORDIYENKO, A. I., KASICHEV, V. P.

"Effect of Plastic flow on the Structure and Mechanical Properties of VT 15 Alloy"

V sb Vopr. prochnosti i plastichnosti met. (Problems of the Strength and Plasticity of metal -- collection of works), Minsk, Nauka i tekhn. Press, 1971, pp 60-61 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I668)

Translation: The effect of the degree of cold deformation and the initial structural state before deformation on the formation of the structure and mechanical properties of VT15 alloy was investigated during fast continuous heating.

1/1

USSR

UDC 669.14+15:539.43

GREBENIK, V. M., GORDIYENKO, A. V., and TSAPKO, V. K., Dnepropetrovsk Metallurgical Institute

"Dependences Between the Fatigue and Static Characteristics of Carbon and Alloyed Steels"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 164-169

Abstract: As a result of the statistical processing of a large amount of experimental data the authors have found the dependences between the fatigue and the static characteristics individually for carbonaceous and alloyed steels. They give evaluations of the dependences obtained that permit determining the necessary characteristics with the required confidence and using them for designing components for strength and durability.

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USSR

GREBENIK, V. M., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 164-169

The authors use several graphs to illustrate their findings. They have compiled one long table to show numerically the results of a correlation analysis of the fatigue and static characteristics of carbonaceous and alloyed steels.

The article contains 3 illustrations, 1 table, and 4 bibliographic references.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMPUTER SOLUT ON OF PROBLEMS OF IMPACT BUCKLING OF ELASTIC SYSTEMS BY A FINITE DIFFERENCE METHOD -U-
AUTHOR--GORDIYENKO, B.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA TVERDOGO TELA, MAY-JUNE 1970, P. 143-148
DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BUCKLING, BIBLIOGRAPHY, COMPUTER APPLICATION, IMPACT STRENGTH, FINITE DIFFERENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605011/E12 STEP NO--UR/0484/70/000/000/0143/0148

CIRC ACCESSION NO--AP0140219
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140219

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF CERTAIN ASPECTS OF THE USE OF FINITE DIFFERENCE METHODS TO OBTAIN APPROXIMATE SOLUTIONS TO IMPACT BUCKLING PROBLEMS. AMONG THE QUESTIONS CONSIDERED ARE THE PROCEDURE FOR STARTING THE CALCULATION AND WAYS OF DETERMINING THE STABILITY AND CONVERGENCE OF THE FINITE DIFFERENCE METHOD EMPLOYED. RELATIONS ARE OBTAINED FOR ROUGHLY CHOOSING NETWORK PARAMETERS WHICH ENSURE BOTH COMPLETENESS OF INFORMATION AND STABILITY OF THE FINITE DIFFERENCE METHOD.

UNCLASSIFIED

USSR

UDC 612.122.1:612.59

VERNSHTEYN, V. A., and GORDIYENKO, G. P.

"Glycemia Fluctuations During the Hypothermy Process With and Without Narcosis"

Alma-Ata, Izvestiya Akademii Nauk Kazakh SSR, Seriya Biologicheskaya, 3, May/Jun 71, pp 76-79

Abstract: The authors present a chart summarizing a wide range of results in the literature on the effect of hypothermy on hyperglycemia. In their own research they used 108 white male rats divided in three groups. For non-narcotized rats, blood glucose concentration (M±m) initially comprised 98±3; at 30° -- 127±6; at 16° -- 124±6mg%. For narcotized rats the corresponding figures were 93±6, 85±6, and 88±5 mg%. This data provides reliable evidence of a rise of glycemia during the development of hypothermy without narcosis and the complete suppression of this reaction on introduction of large doses of ganglion-blocking, neuroplegic, and narcotizing substances. The problem remains, however, concerning occasional references to hyperglycemia with hypothermy under narcosis, particularly in surgical patients. Apparently minute quantities of adrenalin can produce hyperglycemia without producing cardiovascular reactions. The level of glucose concentration in the blood can

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VERNSHTEYN, V. A., and GORDIYENKO, G. P., Izvestiya Akademii Nauk Kazakh SSR, Seriya Biologicheskaya, 3, May/Jun 71, pp 76-79

serve as a sensitive indicator of the degree to which protective reactions have been suppressed in the organism subjected to hypothermy.

2/2

USSR

GORDIYENKO, I. I.

"Unification of Computer Processes of Automatic Selection"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 46, Novosibirsk, 1971, pp 222-225, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V730).

NO ABSTRACT.

1/1

USSR

TAVADZE, F. N., Academician, Georgian Academy of Sciences, and POSTNIKOV, V. S., Professor of Physics and Mathematics, and GORDIENKO, L. K., Doctor of Technical Sciences, Resp. Eds.

Analiticheskiye vozmozhnosti metods vnutrennego treniya (The Analytical Possibilities of the Internal Friction Method), Moscow, "Nauka," 1973, 195 pp

Translation of Annotation: Review articles of Soviet and foreign scholars who participated in the symposium devoted to "Analytical Possibilities of the Internal Friction Method" are presented. The symposium was held in Tbilisi in October, 1971. The papers consider problems of research in relaxation processes in solid bodies, interaction between flux defects, phase transformations, superconductive exchanges, the mechanisms of internal friction (damping) and other questions. The collection is intended for researchers and practical metallurgists, specialists in solid state physics, and teachers and students at technical institutions of higher learning.

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TAVADZE, F. N., The Analytical Possibilities of the Internal Friction Method, Moscow, "Nauka," 1973, 195 pp

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UDC 539.67

GORDIYENKO, L. K., and STEPANOV, V. N.

"On Temperature Dependence of Internal Friction in Austenite Steels in the Polygonized State"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 138-142

Abstract: Results are presented of an investigation of relaxation processes in chrome-nickel 1Kh18N9 and 1Kh18N12T steels at various stages of mechanical and heat treatment strengthening, including in the polygonized state. Data are obtained on the effect of plastic deformation and subsequent polygonized annealing on internal friction temperature dependence; the nature of relaxation processes in the 20-650°C temperature range is discussed. 4 tables, 2 figures, 7 references.

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USSR

UDC 539.67

STEPANOV, V. N., and GORDIYENKO, L. K.

"Internal Friction Variation in 1Kh18N9 and 1Kh18N12T Steels in the Polygonized Annealing Process"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 143-148

Abstract: The kinetics of internal friction variation in preliminary deformed austenite steels in accordance with a mechanical heat treatment procedure in the process of polygonized annealing is investigated and an analysis is made of the kinetic characteristics at various stages of polygonized structure formation and its subsequent stabilization for different deformation modes and temperatures. A criterion is proposed which makes it possible to evaluate the termination time of the primary polygonization structure formation by a minimum on the kinetic characteristic of internal friction, and to attain the necessary thermal stability of a strengthened state by the emergence of kinetic characteristics onto the horizontal section. The causes of a minimum formation on the internal friction kinetic characteristics and their subsequent stabilization are discussed. 1 table, 3 figures, 5 references.

1/1

Thermomechanical Treatment

USSR UDC 539.4.015

RYBOVALOV, YU. P., and GORDIYENKO, L. K., Moscow

"Effect of Thermomechanical Treatment and Subsequent Creep on Sensitivity of Steel 1Kh12V2MF to Stress Concentrations and on Resistance to Brittle Fracture"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 77-84

Abstract: A study was made of criteria characterizing the tendency of a strengthened, thermally stable steel to brittle fracture as a result of stress concentrations, as well as criteria for evaluating the deformability of a high-strength metal in rigid forms of a stress state. The material used for this work was steel 1Kh12V2MF (EI-756) in the form of turbine disks, 500 mm indiameter. It was found that the criteria of Irvin K_{ic} was best suited for this purpose. As a result of thermomechanical treatment, resistance of the steel to propagation of brittle cracks is increased (K_{ic} grows from 178 to 205 $kg/mm^{3/2}$); subsequent creep lowers the K_{ic} level, but in the case of the strengthened steel this lowering is sharply slowed, which gives evidence of a high thermomechanical stability for the high-strength state produced. Thermomechanical treatment improves deformability of the steel in the initial stages of elastic-plastic stress despite a lowering of the overall

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RYBOVALOV, YU. P., and GORDIYENKO, L. K., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 77-84

level of plastic properties. This attests to the increased capability of the strengthened material to relaxation of local overstrain. Increased deformability is also maintained after long-time creep (up to 10,000 hours) in the 500-600°C interval. Two figures, one table, ten bibliographic references.

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1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ENERGY MODEL OF THE THERMOPLASTIC STRENGTHENING OF DISPERSION HARDENED ALLOYS -U-

AUTHOR-(03)-GORDIYENKO, L.K., POLYAKOV, M.G., TVOROGOV, I.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (1), 90-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MODEL, THERMODYNAMICS, ALUMINUM ALLOY, METAL HEAT TREATMENT, METAL HARDENING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0278 STEP NO--UR/0472/70/000/001/0090/0098

CIRC ACCESSION NO--AP0048553

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0048553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ENERGY MODEL FOR THE DESCRIPTION OF THERMOPLASTIC HARDENING PROCESSES OF METALS WAS CONSTRUCTED THEORETICALLY ON THE BASIS OF THERMODYNAMICS OF IRREVERSIBLE PROCESSES. THE WHOLE PROCESS WAS DIVIDED INTO THE EVALUATION OF WORK IN HARDENING AND IN SOFTENING. THE WORK IN SOFTENING IS HIGHER THAN THE WORK IN HARDENING. THE MODEL WAS APPLIED TO HEAT TREATMENT OF AL ALLOYS (IVANOVA, ET AL., 1965) AS A SPECIAL CASE.

UNCLASSIFIED

USSR UDC 621.791.14:51.001.57

VOINOV, V. P., KANEL', L. S., BEREZINA, Ye. N., and GORDIYENKO, N. I., State Scientific Research Institute of Automobile Transportation

"Use of the Mathematical Programming Method for the Evaluation of the Results of Friction Welding"

Kiev, Avtomaticheskaya Svarka, No 4 (241), Apr 73, pp 19-21

Abstract: The method of mathematical programming, in which the matrix represents a total factorial experiment of 2^n-type, was used to evaluate results of friction welding. From suggested regression functions, the joint influence of principal factors of the process can be evaluated in a wide range of their variation in the friction welding of specimens (16 mm in diam.) from joined steels 20 and 40 Kh and from steel 20; also, optimum parameters of the welding method and maximum values of the impact ductility can be determined for working at normal and low temperatures. To increase the resistivity to brittle failure, a stepped cycle of pressure (heating pressure/peening pressure=5/10) at optimum heating time (t=3 sec) and rotation velocity (n=1200 rpm) must be applied. The impact strength of welded specimens of steel 20 showed satisfactory agreement with calculations from regression functions. Three figures, five formulas, two bibliographic references.
1/1

USSR UDC: 669.018.4:536.422

GORDIYENKO, S. P., FENOCHKA, B. V., FESENKO, V. V.

"Rare Earth Metals and Their Refractory Compounds"

Redkozemel'nyye Metally i Ikh Tugoplavkiye Soyedineniya, Kiev, Naukova Dumka Press, 1971, 168 pp.

Translation of Introduction: Of the 170-year history of the study of the rare earth elements, over 100 years were dedicated by the world's chemists to the discovery and separation of the individual elements. The works of Russian scientists, particularly of D. I. Mendeleyev, who predicted trivalence, the atomic weight and many other physical and chemical properties of the rare earth elements, have been significant in these studies.

At the present time, our country has everything necessary (raw materials, methods of purification, separation and production control) for the creation of a well-developed rare earth element industry. The primary problem is discovery of new areas of application of the rare earth elements, their alloys and compounds.

We must note that the rare earth metals, and particularly their refractory compounds--oxides, carbides, borides, sulfides and phosphides, with melting points of up to 2500-2800°K, are promising materials for various areas of new technology.

In the literature, methods for production of refractory compounds have been presented, and their structural and electrical properties have been studied.

USSR

Gordiyenko, S. P., Fenochka, B. V., Fesenko, V. V., Redkozemel'nyye Metally i Ikh Tugoplavkiye Soyedineniya, Kiev, Naukova Dumka Press, 1971, 168 pp.

However, information on such properties as the evaporation rate, composition and pressure of vapor, necessary for determination of the optimal modes of utilization of rare earth metals and refractory compounds, are scattered through a number of sources.

In addition to the data required to determine evaporation losses, studies of the evaporation of rare earth metals and their refractory compounds allow us to determine the basic thermodynamic properties of these substances at high temperatures. In turn, knowledge of these properties allows us to determine the directions of high temperature processes involving rare earth metals and their refractory compounds, which is necessary for the solution of problems of high temperature chemistry and technology.

Establishment of the correlations of thermodynamic characteristics of rare earth metals and their compounds with the peculiarities of the electron structure of the lanthanides (the presence of deep 4f shells, tending toward stable f^7 and f^{14} configurations) is of particular interest.

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USSR

Gordiyenko, S. P., Fenochka, B. V., Fesenko, V. V., Redkozemel'nyye Metally i Ikh Tugoplavkiye Soyedineniya, Kiev, Naukova Dumka Press, 1971, 168 pp.

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Gordiyenko, S. P., Fenochka, B. V., Fesenko, V. V., Redkozemel'nyye Metally i Ikh Tugoplavkiye Soyedineniya, Kiev, Naukova Dumka Press, 1971, 168 pp.

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UDC 577.37+612.014.428

USSR

GULYAYEV, P. I., ZABOTIN, V. I., SHLIPPENBAKH, N. Ya., and GORDIYENKO, V. A., Laboratory of Physiological Cypernetics, Leningrad State University

"Recording the Electric Fields of Insects in Free Flight"

Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 3, 1970, pp 699-701

Abstract: A brief description is given of a screened metal chamber for recording the electric fields of bumblebees, wasps, flies, and mosquitoes. Results of studies of the insects in their natural habitat were the same as those obtained in the screened chamber, despite the absence of artificial conditions and the unlimited freedom enjoyed by the insects. Thus, the proposed screened chamber appears to be a convenient device for investigating triboelectricity and its possible informational role in insects.

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USSR UDC 621.372.826

GORDIYENKO, V. I., L'vov

"Distribution of the Longitudinal Energy Flux of TM and TE Surface Waves Between Media"

Kiev, Otbor i Peredacha Informatsii, No 27, 1971, pp 45-51

Abstract: The distribution of the longitudinal energy flux of TM and TE surface wave propagated in systems of two and three media was analyzed. Formulas were obtained on the basis of which a detailed analysis of the radial distribution of the energy flux and its concentration can be performed. Graphs are presented for cylindrical conductors as data transmission channels by TM and TE surface waves. These graphs show that on transmission of energy by TM-waves along a metal conductor in a medium determined by the choice of the parameters of the conductor material it is possible to achieve significant concentration of the longitudinal energy flux near the guiding surface by using a conductor with a specific conductivity of the material of $\sigma_1 < 5.75 \cdot 10^7$ 1/ohm-m, a conductor with a magnetic permeability of $\mu_1 > 4\pi \cdot 10^{-7}$ henries/m, a coating with the greatest possible thickness, a coating with a dielectric constant of $\varepsilon_2 > 8.86 \cdot 10^{-12}$ farads/m, and high field frequencies. Up to a frequency of 1/2

USSR

GORDIYENKO, V. I., Otbor i Peredacha Informatsii, No 27, 1971, pp 45-51

10^7 hertz the electric parameters of the media have no significant effect on the concentration of the longitudinal energy flux of the TE-wave. Comparison of the data for the TE-wave with the data for the TM-wave shows that in the systems in which the TE-wave is propagated, in the given field radius there is more significant concentration of the longitudinal energy flux. The effect of the individual parameters on the concentration of the longitudinal energy flux of the TE-wave in such systems is analogous to the effect of the geometric parameters and frequency and opposite to the effect of the electrodynamic parameters.

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USSR UDC 621.372.81.09

GORDIYENKO, V. I., KALASHNIKOV, N. I., GONCHARSKIY, V. N., L'vov

"Experimental Studies of a Single-Conductor Transmission Line for a TE Surface Wave in the 1-10 kHz Band"

Kiev, Otbor i Peredacha Informatsii, Resp. Mezhved. Sb., No 28, 1971, pp 105-107

Abstract: The conditions of propagation of a TE surface wave along isolated cylindrical conductors were checked out by experiments providing for determination of the effect which the radius of the wire and the permeability of the material have on propagation of a TE wave. The experimental procedure is described and a block diagram is given together with the principal characteristics of the transmitting and receiving equipment. The theoretical analysis published by N.A. Armand (*Radiotekhnika i elektronika*, 1959, 4, 10) agrees with the experimental data for the systems studied. Three figures, bibliography of ten titles.
1/1

USSR UDC: 621.372

KALNIBOLOTSKIY, Yu. M., GORDIYENKO, V. N., TKACHENKO, V. A.

"An Algorithm for Minimizing the Sensitivity of Electronic Circuits to Scatter of the Parameters of Their Elements by the Method of Discrete Equivalent Transformations"

Avtomatiz. proyektir. v elektronike. Resp. mezhved. nauchn.-tekhn. sb. (Design Automation in Electronics. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 2, pp 84-90 (from RZh-Radiotekhnika, No 5, May 70, Abstract No 5A70)

Translation: An algorithm is proposed for minimizing the sensitivity of electronic circuits to scatter of the parameters of circuit elements. This sensitivity is minimized by using discrete equivalent converters and the method of the contributions of the elements to the polynomial coefficients of the circuit function. Bibliography of ten titles. Resumé.

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USSR UDC 621.372.1

KALNIBOLOTSKIY, Yu. M., GORDIYENKO, V. N., TKACHENKO, V. A.

"Algorithms for Minimizing the Sensitivity of Electronic Radio Circuits to Dispersion of the Parameters of Circuit Elements by the Method of Discrete Equivalent Conversions"

Avtomatiz. proyektir. v elektron. Resp. mezhved. nauch.-tekhn. sb. (Design Automation in Electronics. Republic Interdepartmental Scientific and Technical Collection), vyp. 2, Kiev, "Tekhnika", 1970, pp 84-90

Abstract: An algorithm is proposed for minimizing the sensitivity of electronic radio circuits to scatter of the parameters of circuit elements. Sensitivity is minimized by using discrete equivalent conversions and the method of contributions of the elements to the polynomial coefficients of the circuit function. One table, one illustration, bibliography of ten titles.

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1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STABILIZATION OF SUPRAMOLECULAR STRUCTURE AND MECHANICAL PROPERTIES OF POLYFORMALDEHYDE BY THE INTRODUCTION OF FILLERS -U-
AUTHOR-(02)-SOLOMKO, V.P., GORDIYENKO, V.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 683-7

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, FILLER, POLYFORMALDEHYDE, ALUMINUM OXIDE, SILICA, PLASTIC MECHANICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0954 STEP NO--UR/0369/70/005/006/0683/0687

CIRC ACCESSION NO--AP0124614
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124614
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF 3AL SUB2 O SUB3.2SIO SUB2 IN THE FORM OF NEEDLES (I), POWDER (II) OR PRISMS (III) ON THE STRUCTURAL STABILITY AND MECH. PROPERTIES OF POLYFORMALDEHYDE WAS STUDIED. I AND II IMPROVED THE MECH. PROPERTIES OF THE POLYMER AND STABILIZED THE SUPRAMOL. STRUCTURE, WHEREAS III WAS INACTIVE. THE AGING STABILITY WAS EXPLAINED BY AN EQUIL. STATE OF THE POLYMER WITH I OR II. THE FILLERS WERE CLASSIFIED ACCORDING TO THEIR "THERMODYNAMIC ACTIVITY".
FACILITY: KIEV. GOSUNIV., KIEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201010005-0"

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--FILLED MOLDING COMPOSITION -U-

AUTHOR-(02)-GORDIYENKO, V.P., SOLOMKO, V.P.

6

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,064

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, FORMALDEHYDE, ALUMINUM OXIDE, SILICON DIOXIDE, WEAR RESISTANT MATERIAL, MOLDING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1805 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132071

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132071

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FILLED MOLDING COMPN. CONSISTED OF A MIXT. OF STABILIZED POLYFORMALDEHYDE AND A FILLER STRUCTURE FORMING AGENT. TO INCREASE WEAR RESISTANCE AND RESISTANCE TO AGING NEEDLE SHAPED CRYST. MULLITE (WITH THE COMPN. 3AL SUB2 O SUB3 TIMES 2SIO SUB2 AND CONTG. PARTICLES 30-300 MU LONG AND 3-8MU THICK) WAS USED FOR THE STRUCTURE FORMING AGENT. FACILITY: SHEVCHENKO, T. G., STATE UNIVERSITY, KIEV.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STUDIES OF PACKING DENSITY OF SUPERMOLECULAR STRUCTURES IN FILLED AND UNFILLED POLYFORMALDEHYDE BY MEANS OF MICROHARONESS -U-

AUTHOR-(02)-GORDIYENKO, V.P., SOLOMKO, V.P.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOLEK SOED (USSR), VOL. 12, NO. 2, P. 300-5 (FEB. 1970)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--MOLECULAR STRUCTURE, FILLER, POLYFORMALDEHYDE, SPHERULITE, MICROHARONESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1846 STEP NO--UR/0459/70/012/002/0300/0305

CIRC ACCESSION NO--AP0135411

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135411

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LOCAL MICROHARDNESS OF DIFFERENT PARTS OF SUPERMOLECULAR STRUCTURES IN UNFILLED AND FILLED POLYFORMALDEHYDE WITH THE PARTICLES OF VARIOUS SHPAES BUT WITH THE SAME NATURE OF SURFACE HAS BEEN STUDIED. THE MICROHARDNESS IS RELATED TO THE PACKING DENSITY. IN THE SPHERULITES IT DECREASES FROM THE CENTER TO THE BORDERS. ACTIVE FILLER CONSIDERABLY INCREASES MICROHARDNESS AND PACKING DENSITY IN THE SPHERULITES. AT POLYFORMALDEHYDE CRYSTALLIZATION WITH INACTIVE FILLER A DEFECT ZONE WITH LOOSE PACKING IS FORMED AROUND ITS PARTICLES. MICROHARONESS OF THE POLYMER IN SPHERULITE RIBBONS IS HIGHER THAN IN SINGLE SPHERULITES. THE MINIMUM MICROHARDNESS IS OBSERVED ON THE BORDERLINES OF SUPERMOLECULAR STRUCTURES.

UNCLASSIFIED

USSR

UDC 669.1:658.562

STETSENKO, N. V., BOLOTNYY, V. M., and GORDIYENKO, V. S., Dneprospetsstal' Plant

"Development of Nondestructive Tests at the Dneprospetsstal' Plant"

Moscow, Stal', No 8, Aug 73, pp 756-758

Abstract: The equipment for ultransonic testing of internal defects in blanks and section rolling is briefly described along with eddy current defectoscopy for testing the surface quality of rolling production which is being used or marked for introduction at the Dneprospetsstal' Plant: three-channel units UDTs-18TZ and UDTs-26, immerision units I-1 and UKP-3, automatic defectoscopes ASK-10 and ASK-12, Zond-1 ferrosounding unit, etc. Mass production is tested in automatic lines and small batch output -- on manual and semimechanized tables. Solid nondestructive testing not only increases quality and reliability of metal product output but alos makes it possible to actively attack the basic technological process.

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USSR UDC 539.23

SVITSKIY, L. D., BELIK, Ya. G., [illegible], V. P., and GORDIYENKO, Ya. I., Khar'kov

"Spraying NiO With Argon Plasma"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 56-59

Abstract: The possibility of producing layers of NiO by spraying it with argon plasma was experimentally investigated. According to thermodynamic calculation data, bunsenite (NiO) can be reduced to metallic Ni by heating over 2460 °C in an argon plasma jet. X-ray structural analysis of sprayed layers revealed the presence of NiO and ~10 wt % metallic Ni. By petrographic investigation of the composition and structure of sphere-like drops originated by spraying and forming the layer, the concentration tendency of Ni and the relative grouping of NiO and metallic Ni on the surface layer could be established. The mutual connection of NiO and metallic Ni in the volume of sphere-like drops is explained with the help of rapid motion-picture filming of the spraying process. Three illustr., seven biblio. refs.

1/1

Instrumentation and Equipment

USSR UDC 620.172.251.05

KAYBYSHEV, O. A., MARKELOV, A. A., and GORDIYENKO, YE. G., Ufa Aviation Institute

"Device for Determining Metal Ductility Over a Wide Range of Deformation Rates and Temperatures"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 7, Jul 73, pp 880-881

Abstract: A new device is described which makes it possible to determine the dynamic ductility of metals by tensile testing in a wide range of deformation rates and temperatures. Design of this device provides heating rates from 15 to 500° C/sec with or without subsequent isothermal soaking. VT9 titanium alloy was tested on this new device and on an MR-05-1 tensile testing machine at deformation rates of $1 \cdot 10^{3}$ and $1 \cdot 10^{-1} sec^{-1}$, respectively, and at temperatures of 850, 900, 950 and 1000° C. In upset testing of VT9 alloy in the selected range of deformation rates, the effect of rate on ductility was not revealed. Macrocracks were not detected even at the highest deformation rates. Results achieved with this new device showed that the ductility of an alloy is highly dependent on deformation rate and temperature. One figure, two bibliographic references.

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USSR UDC: 621.317.44

PRUDKIY, V. P., ADAMCHUK, A. A., STETSENKO, O. A., GORDIYENKO, Yu. N.

"An Instrument for Measuring the Parameters of Magnetodielectrics"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 146-147 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A361)

Translation: The authors describe a highly sensitive measurement installation based on a traveling-wave resonator with the use of a loss compensation device to increase sensitivity. This device is an asymmetric balance circuit with an amplifying element connected in one of its arms. The sensitivity limit of the installation is determined by the gain stability of the amplifier and the transmission factor of the ring-shaped circuit line. Data are given on the Q of the resonator and the sensitivity of the circuit. One illustration, bibliography of two titles. N. S.

1/1

USSR

UDC: 621.375.82

GORDIYETS, B. F., OSIPOV, A. I., SHELEPIN, L. A.

"Oscillatory Relaxation in Gases, and the Molecular Laser (Part I)"

Moscow, Kolebatel'naya relaksatsiya v gazakh i molekulyarnyye lazery (Ch. I). Fiz. in-t AN SSSR. Optich. labor. (cf. English above. Physics Institute of the Soviet Academy of Sciences. Optics Laboratory), preprint No 135, 1972, 76 pp, ill., mimeo. (from RZh-Fizika, No 8, Aug 73, abstract No 8D985 [résumé])

Translation: The article is a state-of-the-art survey of the theory of oscillatory relaxation in gases and its application to the theory of molecular lasers. A brief presentation is made of the procedure for calculating the probabilities of vibrational transitions in collisions, and the formulas which are used in practical computations are presented. The authors discuss relaxation of diatomic and polyatomic molecules modeled by harmonic oscillators. A detailed analysis is made of oscillatory relaxation in a system of harmonic oscillators. Quasistationary distributions of the populations of vibrational levels which arise under appreciably nonequilibrium conditions are considered both in a single-component molecular system and in gas mixtures. Relaxation in the presence of sources of vibrationally excited molecules is discussed, and the mechanisms of operation of lasers based on vibrational-rotational transitions are examined. Bibliography of 106 titles.

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USSR

GORDIYETS, B. F.; OSIPOV, A. I.; SHELEPIN, L. A. (Lebedev Physics Institute, USSR Academy of Sciences)

"Kinetics of Nonresonance Vibrational Exchange and Molecular Lasers"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; January, 1971; pp 102-13

ABSTRACT: The authors studied the kinetics of nonresonance vibrational exchange in molecular systems under conditions in which equilbrium with respect to the vibrational degrees of freedom becomes established more rapidly than transition of energy to translational degrees of freedom. Distributions of the vibrational energy (taking into account two-quantum transitions) were found for a binary mixture of harmonic oscillators and a one-component system of anharmonic oscillators. The distributions depend substantially on the relation between the vibrational quanta. A number of applications of nonresonance exchange in molecular lasers were investigated. Possibilities for "ampli-

USSR

GORDIYETS, B. F., et al, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; January, 1971; pp 102-13

fying" the inverse population by varying the gas and vibrational temperatures in jets and during chemical pumping were investigated. The possibility of obtaining a second oscillation zone in the upper vibrational levels of diatomic molecules was indicated. Gas mixtures suitable for oscillation can be chosen on the basis of the results obtained.

The article includes 28 equations and 4 figures. There are 12 references.

2/2

1/3 046 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--MECHANISMS OF INFRARED RADIATION OF THE UPPER ATMOSPHERE -U-

AUTHOR-(03)-GORDIYETS, B.F., MARKOV, M.N., SHELEPIN, L.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP 437-448

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--UPPER ATMOSPHERE, IR RADIATION, DIATOMIC MOLECULE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0510 STEP NO--UR/0293/70/008/003/0437/0448

CIRC ACCESSION NO--AP0132712

UNCLASSIFIED

2/3 046 UNCLASSIFIED

CIRC ACCESSION NO--AP0132712 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE OSCILLATORY RELAXATION OF DIATOMIC MOLECULES IN THE UPPER ATMOSPHERE AND A JOINT ALLOWANCE WAS MADE FOR THE EFFECT OF PHOTOELECTRONS AND ELECTRIC FIELDS ON ELECTRON AND ION TEMPERATURE. A STUDY WAS MADE OF DIFFERENT MECHANISMS (THERMAL, ELECTRON, CHEMICAL) RESPONSIBLE FOR IR RADIATION. IT WAS FOUND THAT IN THE UPPER ATMOSPHERE, WHOSE CHARACTERISTICS ARE DESCRIBED BY AVERAGED, STANDARD PARAMETERS IN THE ABSENCE OF GEOMAGNETIC DISTURBANCES (KP EQUALS 0), THERE ARE EMITTING LAYERS AT SOME ALTITUDES IN THE RANGE 100-500 KM. AN ESTIMATE OF THE THICKNESS AND INTENSITY OF THE EMISSION OF THESE LAYERS SHOWS THAT IN THE CASE OF EXCITATION OF MOLECULES BY ELECTRON IMPACT IN AN ELECTRIC FIELD AND DURING CHEMICAL REACTIONS THE THICKNESS IS ABOUT 10 KM AND THE INTENSITY OF THE EMISSION IN THE REGION OF THE ROTATIONAL VIBRATIONAL BANDS OF THE MOLECULES NO, CO, N PRIME14, N PRIME15 AND OTHERS (3-8 MICRONS) CAN ATTAIN 10 PRIMENEGATIVE5 -10PRIMENEGATIVE4 ERG-CM PRIME3 TIMES SEC. THE AGREEMENT OF THESE VALUES WITH THE EXPERIMENTAL DATA OF A NUMBER OF ROCKET AND SATELLITE MEASUREMENTS INDICATES THAT ELECTRIC FIELDS AND CHEMICAL REACTIONS IN THE UPPER ATMOSPHERE ARE THE PRINCIPAL FACTORS WHICH LEAD TO THE GENERATION OF IR RADIATION. IN THE FUTURE IT IS NECESSARY TO STUDY THESE PROCESSES FURTHER AND STUDY SUCH IMPORTANT CASES AS THE BEHAVIOR OF THE UPPER ATMOSPHERE DURING GEOMAGNETIC STORMS WHEN THE OBSERVED EMISSION FLUXES IN LAYERS AT ALTITUDES 300-500 KM ARE CONSIDERABLY ENHANCED IN INTENSITY (UP TO 10 PRIMENEGATIVE3 ERG-CM PRIME3 TIMES SEC).

UNCLASSIFIED

3/3 046 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132712

ABSTRACT/EXTRACT--IT WOULD BE INTERESTING TO FORMULATE EXPERIMENTS FOR DETERMINING THE DEPENDENCE OF RADIATION INTENSITY ON THE SPECIFIC STATE OF THE UPPER ATMOSPHERE, ANALYSIS OF THE SPECTRAL COMPOSITION OF THE RADIATION, DETAILED INVESTIGATION OF THE CORRELATION BETWEEN ENERGY FIELDS AND THE INTENSITY IN DIFFERENT SPECTRAL REGIONS, AS WELL AS THE VERTICAL POSITION OF THE EMITTING LAYERS.

UNCLASSIFIED

USSR UDC 541.13

SHTERMAN, V. S., GORDIYEVSKIY, A. V., FILIPPOV, E. L., and BRUK, S. V., Moscow Institute of Chemical Technology imeni D. I. Mendeleyev

"Study of Ion-exchange Membranes. V. Membrane Ion-exchange Electrodes in Nonaqueous Media"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 8, Aug 70, pp 2059-2060

Abstract: The authors studied the behavior of membrane ion-exchange electrodes in solutions of hydrogen chloride and trioctylamine chloride in dehydrated ethanol. The sensitive elements of the electrodes were cation-exchange membrane ankalit K-5 and anion-exchange membranes MA-100 and RMA-101. The results indicate that both cation-exchange and anion-exchange membrane electrodes can be used as indicator electrodes in media with average permittivity values. They should be precalibrated for precise electrochemical measurements. Cation-exchange membranes with strongly acidic functional groups display greater chemical activity in ethanol solutions than anion-exchange membranes containing tertiary and quaternary amino groups.

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UDC 621.316.(001.1+003.13)

USSR

ASTAKHOV, YU. N., GORDIYEVSKIY, I. G., KARASEV, D. D.

"Economical Proportionality in the Electric Power Supply Systems of Municipal Rayons"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities -- collection of works), Leningrad, Energiya Press, 1970, pp 184-186 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 273)

Translation: The economically expedient relations between expenditures on individual elements corresponding to the minimum calculated expenditures for the electric power supply systems of a new municipal rayon are defined. The relations obtained are recommended for estimating the economy of plans developed for electric power supply system construction and design. The bibliography has 7 entries. [Moscow Power Engineering Institute]

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FLOW OF DYE PASTES OVER CYLINDRICAL CHANNELS -U-

AUTHOR-(03)-GORDIYEVSKIY, L.A., PEREPELKIN, I.B., VINOGRADOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 146-149

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FLUID FLOW, DYE, FLUID VISCOSITY, AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1937 STEP NO--UR/0170/70/018/001/0146/0149

CIRC ACCESSION NO--AP0125526

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV7C

CIRC ACCESSION NO--AP0125526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIG. 1. SCHEME OF EXPERIMENTAL INSTALLATION FOR STUDY OF PASTE FLOW OVER TUBES. FIG. 2. TRUE INVARIANT CURVES OF PASTE FLOW OF ACIDIC CLARET WITH DIFFERENT CONTENT OF DRY SUBSTANCES, D SUBR, SEC PRIME1 NEGATIVE, TAU R CYNE-CM PRIME2. FIG. 3. EFFECTIVE VISCOSITY OF DYE PASTES VERSUS CONTENT OF DRY SUBSTANCES. ETA, POISE; C, PERCENT. SUMMARY. THE STUDY OF AQUEOUS PASTES OF AZO DYES WITH ACIDIC CLARET AS AN EXAMPLE SHOWED THAT THESE ARE THE SYSTEMS WITH HIGHLY EXPRESSED VISCOSITY ANOMALY WHICH, HOWEVER, GIVE THE INVARIANT FLOW CURVES RELATIVE TO THE SIZES OF CAPILLARIES AND TUBES (DIAMETERS DIFFER BY 77 TIMES AND LENGTHS BY 87 TIMES). THIS ALLOWS THE DATA ON VISCOSIMETRY TO BE USED FOR CALCULATION OF PASTE FLOW OVER TUBES. THE DEPENDENCE OF VISCOSITY OF AQUEOUS PASTES ON CONCENTRATION IS FOUND.

UNCLASSIFIED

USSR

UDC: 535.231.6

GORDON, A. M., Department of Physics of Nondestructive Inspection, Academy of Sciences of the BSSR

"Investigation of a Capacitive Thermal Radiation Sensor"

Minsk, Vestsi Akademii Navuk BSSR, Seryya Fizika-Tekhnichnykh Navuk, No 1, 1973, pp 31-35

Abstract: The paper describes a capacitive IR sensor for amplifying and converting signals on radio frequencies in combination with low-noise equipment. A diagram of the device is shown in the figure. Applied to the reception area of the sensing element is an absorbing coating in the form of soot with a coefficient of absorption $\epsilon = 0.9-0.92$. The leads are connected to the tank circuit of a high-frequency oscillator. The unit is enclosed in a thermostatically controlled housing with an aperture through which heat radiation falls on the reception area. The sensing element is a ferroelectric ceramic capacitor measuring 1 x 1 x 0.2 mm of a material in the $(BaSr)TiO_3$ system. The Curie point of the material can be varied over a wide temperature range by changing the percent concentration of $SrTiO_3$ and $BaTiO_3$. The Curie point of the chosen ceramic was

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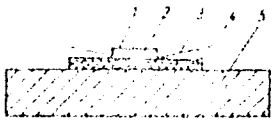
USSR

GORDON, A. M., Vestsi AN BSSR, Ser. Fiz.-Tekhn. Navuk, No 1, 1973, pp 31-35

2¾C. The working temperature was taken as 15½C. The temperature coefficient of capacitance is 0.049, and the loss tangent at 1 MHz is 0.015. The integral sensitivity of the sensor is $2.6 \cdot 10^4$ pF/W, and the time constant is 2 s. The unit gives a sensitivity of about $5.7 \cdot 10^6$ Hz/W when connected to the tank circuit of an oscillator with a frequency of 1 MHz.



1--reception area; 2--sensing element; 3--leads; 4--heat insulation layer; 5--thermosensor

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USSR

GORDON, A. Ya.

"Concerning the Linear Similitude of the Homeomorphisms of Compact Spaces"

Moscow, Uspekhi Matematicheskikh Nauk, No 6, 1970, pp 221-222

Abstract: The linear similitude of the homeomorphisms of compact spaces is proved on the basis of the theorem that if A, B are linear homeomorphisms of the compact X and AF = FB (monological similitude), there exists such a linear homeomorphism Z that AC = CB (linear similitude). 3 bibliographic entries.

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USSR

UDC: 621.391.833

VERTLIB, M. Ya., GORDON, F. G.

"A Device for Suppressing Signals of One Frequency"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299974, Division H, filed 5 Aug 68, published 26 Mar 71, p 214

Translation: This Author's Certificate introduces a device which suppresses signals of one frequency in a signal transmission channel. The device contains a transformer, resonance circuit and balance resistor. As a distinguishing feature of the patent, the unit is designed to give a high base signal transmission ratio, reduce nonuniformity of the frequency response of the channel, and narrow the suppression frequency band while achieving a high coefficient of suppression and weakening the relationship between the transmission ratios and coefficient of suppression on the one hand and load impedances on the other combined with simplification of the suppression circuit. The transformer contains an additional winding which is symmetric with the main winding and has a common point with the main winding, the outer ends of the auxiliary and main windings being interconnected through the above mentioned resonance circuit and balance resistor. The input of the circuit

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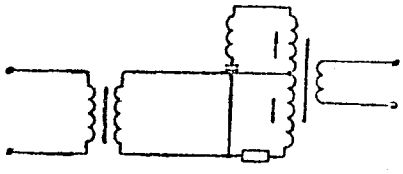
VERTLIB, M. Ya., GORDON, F. G., USSR Author's Certificate No 299974

is the common point of the main and auxiliary windings and the point where the resonance circuit is connected to the balance resistor. The load resistor is connected to the output winding of the transformer.



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AA0044811 GORDON G.G. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243846 OPTICAL THEODOLITE primarily designed for measuring horizontal and vertical angles in triangulation and polygonometry of 2-nd order, astronomic definitions of 3 and 4th order, and engineering work including erection of plumb lines. The special characteristic of the suggested optical theodolite lies in the camps are in the form of a stepped sleeve bring out the support of the instrument's telescope in the space between the columns Such a construction enables to use the instrument not only for measuring angles, but also for engineering work and astronomical observations.
28.9.67 as 1187730/18-10.G.G.GORDON & D.A.ANIKST.
GEODESY,AERIAL PHOTOGRAPHY & CARTOGRAPHY RES.INST.
(30.9.69) Bul 17/14.5.69. Class 42c. Int.Cl.G 01c.

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Tsentral'nyy Nauchno-Issledovatel'skiy Institut Geodezii, Aerofotos"emki i Kartografii

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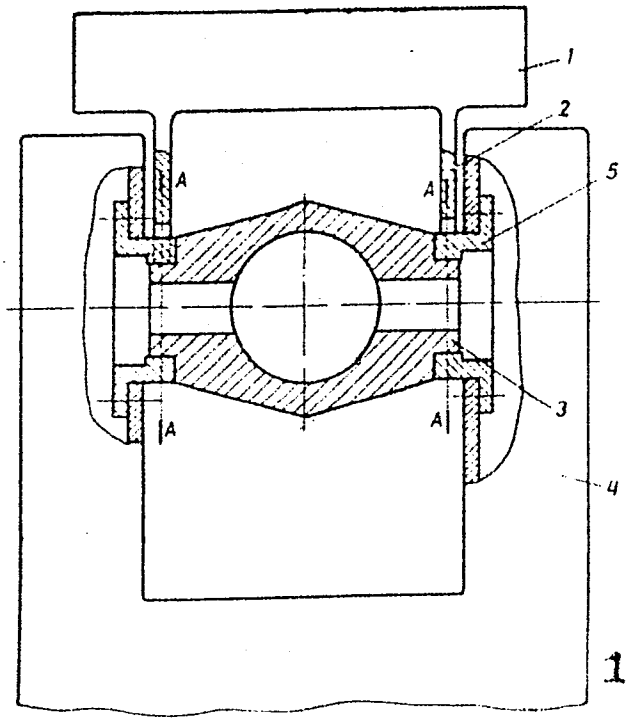

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19771659

USSR UDC: 539.3

GORDON, L. A.

"Design of Plates and Shells by the Method of Finite Elements"

Izv. VNII Gidrotekhn. [News of All-Union Scientific Research Institute for Water Engineering], 1972, 99, pp 168-178, 303 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12V177, by the author)

Translation: Simple compatible rigidity matrices are presented for flat, cylindrical, spherical and toroidal elements. Equations are written for plates, based on hypotheses concerning displacements, and compared with the equations from the plate theory of E. Reissner. One shortcoming of the equations produced is noted: where $h \to 0$ (h being the thickness of the plate), the solution has a limit passage to the solution for a thin plate with different elastic constants. The equations are supplementary in nature, and can be used to suggest a new plan for the method of finite elements for plates and shells of E. Reissner. Eleven biblio. refs.

1/1

USSR

UDC 616.2-036.11-022.14

IL'YENKO, V. I., PLATONOV, V. G., GORDON, M. A., ANTONOV, V. S., BELYAYEVA, N. M. and ANTIPOVA, M. R., All-Union Scientific Research Institute of Influenza, Ministry of Public Health USSR, Leningrad

"Frequency of Development of Associated Infections Accompanying Acute Respiratory Diseases"

Moscow, Voprosy Virusologii, No 1, 1973, pp 82-86

Abstract: Incidence and characteristics of multiple infections were studied among 4,256 patients with clinically diagnosed influenza or acute respiratory disease. Out of 40% of these, for which the etiology had been established, 12.6% had associated infections, the percentage being somewhat higher for hospitalized than for ambulatory patients, but no seasonal variation was found. Analysis of the incidence of associated infections with respect to disease caused by particular pathogens indicated that most (41.7%) associated infections occurred among patients with para-influenza type 2 and least (12%) with influenza type B. Most associated infections (82%) were caused by influenza virus, particularly during epidemics. When influenza virus was not involved, Mycoplasma pneumoniae was encountered most frequently (56.7%). Such multiple infections were normally found to produce more severe symptoms.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SOLID PHASE FORMATION DURING THE THERMAL DECOMPOSITION OF METHANE IN A HYDROGEN ATMOSPHERE -U-
AUTHOR-(03)-GORDON, M.D., LAVROVSKIY, K.P., RUMYANTSEV, A.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(6), 1289-91 (CHEM)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, METHANE, HYDROGEN, PYROLYSIS, CHEMICAL REACTOR, PARTICAL SIZE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1206 STEP NO--UR/0020/70/191/006/1289/1291

CIRC ACCESSION NO--AT0134880

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134880

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECTS OF INPUT RATE AND TUBE DIAM. ON C FORMATION IN THE PYROLYSIS OF CH SUB4NEGATIVE H AT 1400-800DEGREES IN AL SUB2 O SUB3 FLOW REACTORS WERE STUDIED. AS THE INPUT RATE WAS REDUCED THE RATES OF C DEPOSITION AND C SUB2 H SUB2, MEC TRIPLE BOND CH, AND CH TRIPLE BOND CC TRIPLE BOND CH FORMATION ROSE SHARPLY, REACHING AT 15-30 M-SEC FLAT MAX. REFLECTING EQUIL. BETWEEN RATES OF FORMATION AND GROWTH OF PARTICLES IN THE GASEOUS PHASE AND THEIR DIFFUSION TO THE WALLS. AS THE TUBE DIAM. WAS INCREASED FROM 1.1 TO 2.7 MM AND, AT LOW CH SUB4 CONCNS., TO 5.0 MM, THE RATE OF C DEPOSITION REMAINED UNCHANGED, BUT AT GREATER THAN OR EQUAL TO 16-18PERCENT CH SUB4 CONCNS. IN 5 MM TUBES IT ROSE APPRECIABLY, DUE TO FORMATION OF C PARTICLES NOT ONLY ON THE WALLS IN THE GASEOUS PHASE WHERE, WITH THE INCREASING SUPERSATN., THE CRIT. PARTICLE SIZE AND ASSOCD. FREE ENERGY CHANGE WERE REDUCED AND THE PROBABILITY OF FORMATION OF PARTICLES OF THE CRIT. SIZE WAS INCREASED. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.95

MEL'NIKOV, N. N., STONOV, L. D., KHASKIN, B. A., GORDON, O. G., USACHEVA, N. M., SABLINA, I. V., GRUZINSKAYA, N. A.

"New Herbicide and Desicant — Bipyridyl Phosphate"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection -- collection of works), No 1, Moscow, 1970, pp 167-173 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N492)

Translation: A series of phosphorus-containing salts of 4,4'-bipyridylium with the formula $[NC_5H_4\text{-}C_5H_4NCH_3]^+[(RO)OP(=X)YR']^-$ (I) (R, R', X, Y, the yield in %, the melting point in °C, $n^{20}D$ are presented): Me, Me, O, O, 58, 95-102, --; Me, Pr, O, O, 60, --; 1.4190; Me, Me, S, O, 59, 210 (dil.), --; Me, Me, S, S, 51, 106-7.5, --; Me, 2,4,5-$Cl_3C_6H_2$, S, O, 67, 84-5, --; Et, 2,4,5-$Cl_3C_6H_2$, S, O, 44, --, 1.6141 were synthesized. In order to obtain I, equimolecular amounts of 4,5-bipyridyl and esters of phosphorus acids were heated for 15-20 hours in a solvent (C_6H_6, alcohol, petroleum ether) at 40-100°. With alkylation of the 4,4'-bipyridyl in an excess of esters of phosphorus acids with

USSR

MEL'NIKOV, N. N., et al., Khim. sredstva zashchity rast., No 1, Moscow, 1970, pp 167-173

heating (70-100°)' for 10-15 hours in the absence of a solvent or at 20-25° for 2-3 weeks, substances with the formula $[CH_3NC_5H_4-C_5H_4NCH_3]^{2+}[(RX)OP(O)YR']^{2-}$ (II) are obtained (R, R', X, Y, the yield in %, and the melting point in °C are presented): Me, Me, O, O, 63, 117-120 (IIa); Me, Me, S, O, 34, 52-61.5; Me, Et, S, O, 30, 78-80; Me, Me, S, S, 68, 138 (dil.); Me, Et, S, S, 61, 118 (dil.); Me, 2,4,5-$Cl_3C_6H_2$, S, O, 80, 166 (dil.). The IIa has low toxicity for warm blooded animals, significant herbicidal activity and a high defoliating effect.

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USSR

UDC 631.547:633.51

STONOV, L. D., GORDON, O. G., ZUBKOVA, N. F., and GRUZINSKAYA, N. A., All-Union Scientific Research Institute of Chemical Plant Protectants

"Transpormation of Butyphos in Medium-fibrous and Fine-fibrous Cotton Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 54-56

Abstract: To study the interrelation between the transformation of butyphos in plant tissues and its defoliating activity, the authors determined the butyphos content of cotton plants by the method of thin layer chromatography. It was found that leaf blade tissues and explants (isolated abscission zones) of both fine-fibrous and medium-fibrous cotton show the same response to butyphos, viz. they decompose it. The decrease in the butyphos content of the leaf blade of medium-fibrous cotton apparently is not the direct cause of accelerated absciss layer formation in leaves.

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USSR UDC 632.95

MEL'NIKOV, N. N., KHASKIN, B. A., STOKOV, L. D., SABLINA, I. V., GORDON, O. G., and GRUZINSKAYA, N. A.

"Desiccant-Defoliant"

USSR Authors' Certificate No 249113, filed 28 Mar 68, published 20 Jan 70 (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N624P by N. A. GRUZINSKAYA)

Translation: Salts of 4,4'-dipyridylium of general formula $[(Me)_nNC_5H_3C_5H_3N(Me)]^+$ $[(MeO)_2P(X)O]^-_m$ (I), where X = O or S, n = 1 when m = 2 or n = 0 when m = 1, are used as plant desiccant-defoliants. I's can be used for the desiccation and defoliation of cotton, potatoes and fruit crops in doses of 0.8-2.5 kg/ha.

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1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EXPLANTS AS TEST OBJECTS FOR STUDYING THE DEFOLIATING ACTIVITY OF NEW COMPOUNDS -U-

AUTHOR-(04)-STONOV, L.D., ZUBKOVA, N.F., GORDON, O.G., GRUZINSKAYA, N.A.

COUNTRY OF INFO--USSR

6

SOURCE--AGROKHIMIYA 1970, (1), 132-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DEFOLIANT AGENT, ORGANIC PHOSPHORUS COMPOUND, MAGNESIUM COMPOUND, CHLORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0443 STEP NO--UR/0485/70/000/001/0132/0138

CIRC ACCESSION NO--AP0116109

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS WITH BUTIPHOS AND MG(CLO SUB3) SUB2 AS THE MOST COMMON DEFOLIANTS USED FOR DEFOLIATION OF COTTON SHOWED THAT EXPLANTS OF COTYLEDONARY AND TRUE LEAVES OF COTTON PLANTS PLACED IN PETRI DISHES IN AGAR CONTG. THESE DEFOLIANTS SHOWED THE SAME RESPONSE TO THESE DEFOLIANTS AS THE WHOLE PLANTS. EXPLANTS, THUS, MIGHT BE USED FOR PRELIMINARY TESTING OF NEW COMPDS. FOR DEFOLIATION OF COTTON. FACILITY: VSES. NAUCH. ISSLED. INST. KHIM. SREDSTV ZASHCH. RAST., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 624.07:534.1

KRISHTAL, M. A., GOLOVIN, S. A., ARKHIPOV, I. K., ROSTOVTSEV, N. M., GORDON, V. A.

"Determining Measures for Energy Scattering in the Excitation of Transverse Resonance Vibrations"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering Under Oscillations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 191-195 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V269)

Translation: Semiempirical relationships are presented which make it possible to determine on the basis of amplitude-time curves obtained from vibrograms under the excitation of transverse resonance oscillations of the sample the decrements in vibrations for a given material (for different stresses) without specifying the mechanism for internal energy scattering. It is shown from the processing of results for three samples (copper, nickel, titanium) that the calculated decrements in vibrations under excitation of oscillations are considerably different from decrements obtained experimentally in studying damping of vibrations. Yu. G. Balakirev.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE CHOICE OF A PRINCIPAL SCHEME OF HIGHLY MOBILE GAMMA THERAPEUTIC APPARATUS -U-

AUTHOR-(04)-ATOVTANY, A.E., GORDON, V.I., DAVYDOVA, I.A., LITVAN, A.B.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 28-31

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IRRADIATION APPARATUS, MEDICAL APPARATUS, GAMMA RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0282 STEP NO--UR/0241/70/015/005/0028/0031

CIRC ACCESSION NO--AP0120971

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 016

CIRC ACCESSION NO--AP0120971

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES OF A KINEMATIC PRINCIPAL SCHEME ARE A FACTOR DETERMINING THE QUALITY OF THE GAMMA THERAPEUTIC APPARATUS FOR MOBILE IRRADIATION. THE ISSUE DISCUSSES KINEMATIC DIFFERENT GAMMA APPARATUS AND ANALYZES THE INFLUENCE OF PARAMETERS OF THE RADIATION HEAD ON THE TECHNICAL CHARACTERISTICS OF APPARATUS. A NEW SCHEME OF MOUNTING OF MECHANISMS OF THE RADIATION HEAD IS PROPOSED AS A POSSIBILITY OF ESSENTIAL IMPROVEMENT OF THE DESIGN OF GAMMA THERAPEUTIC APPARATUS FOR MOBILE IRRADIATION. FACILITY: MOSKOVSKIY N-I RENTGENO RADIOLOGICHESKIY INSTITUT MINISTERSTVA ZDRAVOOKHRANENIYA RSFSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--GENERAL PROBLEMS CONCERNED WITH THE DEVELOPMENT OF TECHNICAL MEANS OF RADIUM THERAPY -U-

AUTHOR--GORDON, V.I.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 12-16

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIUM, RADIOTHERAPY, THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0277 STEP NO--UR/0241/70/015/005/0012/0016

CIRC ACCESSION NO--AP0120966

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MODERN RADIUM THERAPY HAS AT ITS DISPOSAL A WIDE VARIETY OF TECHNICAL MEANS, THE FURTHER DEVELOPMENT OF WHICH SHOULD BE DIRECTED TOWARDS INCREASE OF THE EFFECTIVENESS OF IRRADIATION. THE PAPER DEALS WITH THE PRINCIPAL TRENDS IN IMPROVEMENT OF THE RADIATION THERAPEUTIC TEHCNIQUE, PROBLEMATIC AND DISCUSSION ASPECTS OF THE DEVELOPMENT OF TECHNICAL MEANS OF RADIUM THERAPY.

FACILITY: MOSKOVSKIY N-I RENTGENO RADIOLOGICHESKIY INSTITUT MINISTERSTVA ZDRAVOOKHRANENIYA RSFSR.

UNCLASSIFIED

USSR

GORDON, V. S., TANAYEV, V. S.

"Deterministic Queueing System with One Instrument and Multilevel Penalty Functions"

Vychisl. Tekhn. v Mashinostr. Nauch.-Tekhn. Sb. [Computer Technology in Machine Building Scientific and Technical Collection], September 1971, pp 3-8 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1975, Abstract No 4V540, from the resume).

Translation: A statement is presented of the problem of determination of the waiting discipline in a line in a deterministic queueing system with one instrument and multilevel penalty functions, the corresponding models of integer linear programming are described and an algorithm for their solution by the method of branches and bounds is presented.

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1/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SELECTION OF THE OPTIMUM PARAMETERS OF MULTICHANNEL ATOMIC BEAM SHAPING DEVICES -U-
AUTHOR-(02)-GORDON, YE.B., PONOMAREV, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. TEKH. FIZ. 1970, 40(5), 1120-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER BEAM CONTROL DEVICE, GAS LASER, HYDROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0933 STEP NO--UR/0057/70/040/005/1120/1127

CIRC ACCESSION NO--AP0131919

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0131519
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW METHOD IS PROPOSED FOR CALCG. OPTIMUM PARAMETERS OF A MULTICHANNEL AT. BEAM SHAPING DEVICE. THE METHOD TAKES INTO ACCOUNT THE RECOMBINATION OF ATOMS INSIDE THE CAPILLARY CHANNELS. THE VALUES OF THE AT. FLUX INTO SOLID ANGLE OMEGA AND THE TOTAL FLUX OF ATOMS AND MOLS. WERE CALCD. FOR VARIOUS RATIOS OF THE CAPILLARY RADIUS TO LENGTH AND FOR VARIOUS VALUES OF THE RECOMBINATION PROBABILITIES ON THE CHANNEL SURFACE EPSILON. OPTIMUM PARAMETERS WERE DETD. FOR THE H AT. BEAM SHAPING DEVICE OF A H LASER. THE SHAPING DEVICE PROVIDES THE NEEDED H ATOM FLUX AT A GIVEN OMEGA AT A MIN. VALUE OF THE TOTAL AT FLUX. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

GORDON, Yu. A. (Col.) Mil

ARTILLERY RECONNAISSANCE

[Excerpt from book by Col Yu. A. Gordon and Col A. V. Mikeshkov, docents and candidates in military sciences, Artilleriyskaya Razvedka. Moscow. Military Press, Russian, 1970, signed to press 15 December 1970, 192 pp]

Title Page

Artilleriyskaya Razvedka (Artillery Reconnaissance)

Signed to Press: 15 December 1970. Number of Copies: 7700.

Brief Description

The book gives a description, based on the open press, of artillery reconnaissance and methods of getting reconnaissance information for the artillery. It also gives a brief description of the work of artillery commanders and their staffs in organizing and conducting reconnaissance in modern combat.

The book is intended for the purpose of improving the military-technical knowledge of artillery soldiers, sergeants, and officers.

Table of Contents

JPRS: 55386

8 March 72

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Introduction

Under modern combat conditions success in artillery combat action depends largely on effective artillery reconnaissance. It is conducted by artillery reconnaissance and fitting subunits (polradiodentyal) with optical and electronic-optical instruments, sound ranging, radar, and radiotechnical stations; and also other means.

The main mission of artillery reconnaissance is to detect and identify exactly the location (coordinates) of targets in timely fashion. Without this it would be impossible to hit targets with artillery fire. To carry out this mission successfully artillery reconnaissance should be conducted to a great depth (not less than the effective range of artillery systems), continuously, actively, purposefully, and in timely fashion in order to obtain authentic and accurate information.

Commanders and their staffs, who carry out a large complex of measures directed toward timely acquisition of authentic and accurate reconnaissance information about targets hit by artillery fire, engage in organization of artillery reconnaissance.

The effectiveness of artillery reconnaissance depends in large measure not only on the initiative of commanders and their staffs in organizing and conducting it but on the level of knowledge and practical skills of soldiers, sergeants, and all personnel in subunits engaged in obtaining reconnaissance information.

If the book here commended to the attention of readers should in some measure contribute to raising their level of knowledge about artillery reconnaissance the authors will consider their modest mission a success.

The authors wish to acknowledge the help given by Col I. S. Zakharov in editing the manuscript and preparing it for the press.

Conclusion

From this book the reader obtained an idea about the great variety and complexity found in reconnaissance for targets in modern combat and methods used to carry out this work. He also gained an acquaintance with the greatly varying instruments and reconnaissance apparatuses used.

USSR UDC 621.371:538.569.4

ABLYAZOV, V. S., BASHARINOV, A. Ye., GORELIK, A. G., GORDON, Z. I., KALASHNIKOV, V. V., KUTUZA, B. G., MITNIK, L. M., PENYAZ', L. A., FROLOV, A. V., and FROLOV, Yu. A.

"Absorption and Radiation of the Atmosphere in the 0.5-10 cm Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 3-7 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A309)

Translation: The method and the results of measuring the absorption and radiation of the atmosphere for waves of 0.5-10 cm and, in particular, in the absorption bands of oxygen and water vapor, are given. The measurements were made for the purpose of investigating the propagation of uhf waves under various meteorological conditions, which were recorded simultaneously with the radio measurements. Curves are given of the attenuation and radio brightness temperature for rain clouds. Two illustrations, bibliography of five. N. S.

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USSR

UDC 612.014.416(049.3)

TOLGSKAYA, M. S., and GORDON, Z. V.

"Morphological Changes Induced in Experimental Animals by Electromagnetic Radiofrequency Waves" (A monograph reviewed by A. P. Avtsyn)

Moscow, Gigyena Truda i Professional'nyye Zabolevaniya, No 3, 1972, p 60

Abstract of Review: The monograph surveys the growing application of electromagnetic waves of various frequencies and the increasing exposure of workers, technicians, and engineers to this type of radiation. It presents and discusses original and literature a data on pathological changes induced by radiofrequency waves in various organs, especially the peripheral nervous system, the brain sten, endocrine glands, and neurcendocrine systems. The individual findings are synthesized into an overall concept of the mechanism of action. Maximum permissible exposure standards are suggested on the basis of the cumulative effects determined by the intensity and duration of irradiation. The monograph is a valuable aid to physicians and investigators specializing in occupational diseases. Problems recommended for further investigation should be given serious consideration.

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Welding

USSR UDC: 621.791.019

MAKARA, A. M., GORDONNYY, V. G., DIBETS, A. T., SARZHEVSKIY, V. A., PARFESSA, G. I., Institute of Electric Welding imeni Ye. O. Paton

"Remelting of High-Strength Steels as a Means of Increasing the Resistance to the Formation of Cold Cracks During Welding"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 1-5.

Abstract: One method of improving the properties of high strength structural steels is refining of the initial metal, i.e., decreasing the content of harmful impurities, gasses, nonmetallic inclusions, and improvement of the initial structure of the metal. The use of electric-slag and cathode-ray remelting can significantly improve the ductility and toughness of the remelted steel by decreasing the content of sulphur, phosphorus, oxygen, nitrogen, hydrogen and nonmetallic inclusions. Following refining remelting, the resistance to the formation of cold cracks near a welded seam in type 35Kh2N2M and 42Kh2GSNM steels is increased by 50-60%.

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USSR

GAL'PERIN, Ye. I., and GORDONOV, A. Yu., (editors)

"Special Elements of Digital Computer Memory Based on Semiconductor Devices" (Spetsial'nyye Elementy Zapominayushchikh Ustroystv EVM Na Poluprovodnikovykh Priborakh), Moscow, Izd-vo "Sovetskoye Radio," 30,000 copies, 352 pages

Abstract: The book is one of the volumes in the series "Radio Electronic Circuits Based on Semiconductor Devices. Design and Computation."

The book presents a classification and the operating peculiarities of special elements of computer memory devices. Various pulse current shaping circuits, composite switches, reproduction amplifiers, and their requirements for memory devices and type of magnetic storage are presented. General information for each type of circuit is given, different variations are considered, and a method for engineering calculations is given, which is illustrated by a large number of examples of calculating practical circuits.

A separate chapter is devoted to the problems of microminiturization of special elements for memories, and also to the application of integrated silicon circuits in computer memory structures.

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USSR

GAL'PERIN, Ye. I., and GORDONOV, A. Yu., (editors) "Special Elements of Digital Computer Memory Based on Semiconductor Devices" (Spetsial'nyye Elementy Zapominayushchikh Ustroystv EVM Na Poluprovodnikovykh Priborakh), Moscow, Izd-vo "Sovetskoye Radio," 30,000 copies, 352 pages

The book is intended for engineer-technical workers involved in the development, production, and operation of electronic computers. It may be used as a text for students of universities during course or thesis design. The book has 4 tables, 104 figures, and 96 citations.

The chapter headings are as follows:

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GAL'PERIN, Ye. I., and GORDONOV, A. Yu., (editors) "Special Elements of Digital Computer Memory Based on Semiconductor Devices" (Spetsial'nyye Elementy Zapominayushchikh Ustroystv EVM Na Poluprovodnikovykh Priborakh), Moscow, Izd-vo "Sovetskoye Radio," 30,000 copies, 352 pages

3/3

USSR UDC 621.373.826:53

GORDOV, Ye. P., VAYNSHTEYN, V. D., SOKOLOV, V. V., and TVOROGOV, S. D.

"Some Problems in Quantum Statistical Optics and the Propagation of Electromagnetic Waves"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 184-186 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D387)

Translation: Results are given of the authors' solution to a series of problems in the use of quantum statistical optics in the area of electromagnetic wave propagation. Eigenfunctions of the electromagnetic field vector potential operator are introduced. A method is proposed of statistical computation for measuring the field density matrix as the field is propagated in the medium. The representation of the electromagnetic field in the form of the quantum average of purely field operators is advanced. The change in photon statistics for light propagated in a medium of weak nonlinearity and low absorption is assumed connected with the solution for the corresponding problem in classical electrodynamics. A. K.

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USSR UDC: 681.3.001:518.5

GORDOVSKIY, V.K., GAMOTA, V.S.

"Some Methods of Data Compression"

Sistemy I Sredstva Avtomat. Upr. [Automatic control systems and equipment] Kiev, 1970, pp 135-139 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 3, 1971, Abstract No 3 B83 by the authors)

Translation: The authors study methods of compression of data as applicable to problems requiring solution of systems of high-order linear algebraic equations and calculation of inverse matrices of the same order. In order to save memory, it is suggested that the information, represented in the form of matrices, be written in compressed form. Two methods are studied: the logic method and the coordinate method. According to the first method, the nonzero elements of the matrix and an array of special indicators are recorded, the significant element in the number array corresponding to 1 in the array of indicators, the zero element corresponding to zero in this array. This method should be used for machines with N-bit words if $M > p\frac{n^2}{N}$: where P is the number of elements

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USSR

UDC: 681.3.001:518.5

GORDOVSKIY, V.K., GAMOTA, V.S., Sistemy I Sredstva Avtomat. Upr. Kiev, 1970, pp 135-139.

in the matrix written in one computer word; N is the dimensionality of the matrix; M is the number of zero elements in the matrix. The coordinate method indicates the number of nonzero elements of the matrix. This method is suitable when $M > n^2/L$. It is noted that compression programs for the Razdan-2 and Ural-14 computers have been written for these methods.

2/2

Acc. Nr: AP0034215 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR 0078

G

71259p Complexing palladium(II) with α-benzil dioxime in halide and thiocyanate media. Tikhvinskaya, T. I.; Biryukov, A. A.; Shlenskaya, V. I.; Gordynskaya, N. K. (Kafedra Anal. Khim., Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 128-33 (Russ). By using competitive ligands, like Cl^-, Br^-, or SCN^- ions, stability constant (κ_2) of Pd(II)-α-benzil dioxime (HL) complex, PdL_2, was detd. and is given as log $\kappa_2 = 34.6 \pm 0.5$. At 20° and ionic strength = 1.0, distribution const. (λ) of PdL_2 in H_2O-C_6H_6 system, presented as log λ, is 2.3 ± 0.2. Equil. consts. (as log K) of $Pd^{2+} + 2HL \rightleftharpoons PdL_2(aq.) + 2H^+$ and $PdL_2(aq.) + OH^- \rightleftharpoons PdL_2OH^-$ are 13.9 ± 0.2 and 4.8 ± 0.2, resp. HMJR

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UDC 619

GOREGLYAD, Kh. S.

Bolezni Dikikh Zhivotnykh (Diseases of Wild Animals), Minsk, "Nauka i Tekhnika" Press, 1971, 304 pp

Translation: Annotation: Diseases of wild animals and birds are described, and the reasons for the spread of infectious, invasive, and other diseases are analyzed in the monograph. Information regarding certain species of wild life, reasons for their extinction, and also veterinary-sanitary evaluation of game meat is provided.

The monograph is intended for scientists, hunters, and veterinary specialists.

Table of Contents (Partially Expanded)

USSR

GOREGLYAD, Kh. S., Bolezni Dikikh Zhivotnykh (Diseases of Wild Animals), Minsk, "Nauka i Tekhnika" Press, 1971, 304 pp

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USSR

GOREGLYAD, Kh. S., Bolezni Dikikh Zhivotnykh (Diseases of Wild Animals), Minsk, "Nauka i Tekhnika" Press, 1971, 304 pp

USSR UDC 621.371:538.569.4

ABLYAZOV, V. S., BASHARINOV, A. Ye., GORELIK, A. G., GORDON, Z. I., KALASHNIKOV, V. V., KUTUZA, B. G., MITNIK, L. M., PENYAZ', L. A., FROLOV, A. V., and FROLOV, Yu. A.

"Absorption and Radiation of the Atmosphere in the 0.5-10 cm Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 3-7 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A309)

Translation: The method and the results of measuring the absorption and radiation of the atmosphere for waves of 0.5-10 cm and, in particular, in the absorption bands of oxygen and water vapor, are given. The measurements were made for the purpose of investigating the propagation of uhf waves under various meteorological conditions, which were recorded simultaneously with the radio measurements. Curves are given of the attenuation and radio brightness temperature for rain clouds. Two illustrations, bibliography of five. N. S.

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GORELIK, A. G.

physical + mathematical sciences

(3)

Sergei?(JPRS #56831 22 Aug 1972

UDC 551.501.8

STUDY OF VERTICAL MOVEMENTS IN CLOUD SYSTEMS BY DECIMETER-BAND PULSE-COHERENT RADAR

[Article by Doctor of Physical and Mathematical Sciences A. G. Gorelik, V. V. Knyazev, L. N. Ugloza, Central Aerological Observatory; Moscow, Meteorologiya i Gidrologiya, Russian, No 6, 1972, pp 59-76]

The results of studying the structure of vertical movements in clouds by decimeter-band pulse-coherent radar are discussed. A block diagram of a device for recording the echo and statistical processing of it by means of an optical spectral analyzer is presented. The results are presented in the form of time-altitude sections.

At this time pulse-coherent radar is widely used in meteorological practice. By means of this radar and studying the statistical characteristics of the echo, it is possible rapidly and with sufficient accuracy to obtain data on the wind, turbulence and vertical movements. The utilization of pulse-coherent radar to investigate the fields of vertical air movements determining the development and basic parameters of cumulus congestus is especially prospective. Such work has been performed abroad beginning in 1961 [7, 12]. The results obtained during vertical sounding of the clouds are analyzed in these papers.

Two methods of estimating the velocities of the vertical air movements are used. First, let us consider the method of estimating these velocities with respect to the left-hand edge of the doppler spectrum. It is proposed that this edge is caused by the presence of light particles with gravitational velocities of about 1 m/sec in the dispersion medium the echo from which somewhat exceeds the noise level [8, 12]. The second method is by the data from simultaneous measurements of the mean doppler shift of the frequency and power of the echo [7, 13]. As is demonstrated in [9], the measurement errors by each of these methods can be significant [to 3-4 m/sec).

Recently, a number of new papers [10, 11, 14] have appeared on the structure of vertical movements in precipitation. Thus, the measurements described in [10] and performed simultaneously by two radars permitted maps of the vertical and horizontal movements of the diffusers in a shower to be obtained and the area of primary growth of graupel to be isolated.

USSR

GORELIK, A. G., LAMBIN, L. N., TSYMBAL, G. Ya.

"System for Timely Change in Structure of Algorithms"

Vuchisl. Tekhn. v Mashinostr. Nauch.-tekhn. sb. [Computer Engineering in Machine Building, Scientific and Technical Collection], June, 1970, pp 41-54, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V700 by the author's).

Translation: A functional description is presented of the system. The interrelationship of man with machine is studied on the example of the solution of practical problems. A foundation is presented for a method of ordering the information in a description of a model of an object.

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1/3 033 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--DETERMINATION OF THE COEFFICIENT OF TURBULENT DIFFUSION IN THE FREE ATMOSPHERE USING DIPOLE REFLECTORS -U-
AUTHOR-(02)-GORELIK, A.G., TOLSTYKH, V.G.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 6, 1970, PP 635-638
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ATMOSPHERIC SCIENCES, NAVIGATION
TOPIC TAGS--FREE ATMOSPHERE, DIPOLE ANTENNA, DIFFUSION COEFFICIENT, REFLECTED SIGNAL, CLOUD FORMATION, RADIO ECHO

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605041/E07 STEP NO--UR/0362/70/006/006/0635/0638

CIRC ACCESSION NO--AP0142752
UNCLASSIFIED

2/3 033 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142752

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 1966 AN ATTEMPT WAS MADE AT SIMULTANEOUS MEASUREMENT OF THE DIFFUSION COEFFICIENT K AND THE RATE OF DISSIPATION OF TURBULENT ENERGY EPSILON FROM CLOUDS OF DIPOLE REFLECTORS. THE DIFFUSION COEFFICIENT WAS MEASURED USING A CLOUD OF DIPOLE REFLECTORS INTRODUCED INTO THE ATMOSPHERE FROM A HELICOPTER; THE TEMPORAL CHANGE IN THE EXTENT OF THE CLOUD WAS MEASURED, AS WAS THE DISTRIBUTION OF THE INTENSITY OF THE REFLECTED SIGNAL IN THE CLOUD AND ITS SPATIAL TEMPORAL VARIATIONS. IN ADDITION, DURING THE EXPERIMENT IT WAS POSSIBLE TO DETERMINE THE SPECTRUM OF FLUCTUATIONS OF THE INTENSITY OF RADIO ECHOES AND VARIATIONS OF THE MEAN DOPPLER FREQUENCY. THIS MADE IT POSSIBLE TO COMPUTE THE RATE OF DISSIPATION OF TURBULENT ENERGY IN THE ATMOSPHERE AND ATTEMPT TO FIND A RELATIONSHIP BETWEEN K AND EPSILON. THE EXPERIMENTAL METHOD IS FULLY DESCRIBED. MEASUREMENT DATA ARE SUMMARAIZED IN A TABLE. THE MEASURED VALUES OF THE DIFFUSION COEFFICIENT VARY AT ABOUT 10 PRIME5 CM PRIME2-SEC, WHICH IS CLOSE TO MEASUREMENTS MADE BY OTHER AUTHORS UNDER SIMILAR CONDITIONS. DURING THE MEASUREMENTS EPSILON VARIED FROM 1.5 TO 10 CM PRIME2-SEC PRIME3; THE RICHARDSON COEFFICIENT, COMPUTED FOR 300 METER LAYERS FOR THE ENTIRE LOWER KILOMETER LAYER ON THE BASIS OF RADIOSONDE DATA, VARIED FROM 0.09 TO 0.0045. DURING SOME EVENING DROPS THE SCATTERERS HUNG AT SOME ALTITUDE (USUALLY 200-400 M) AND THEN DESCENDED NO FARTHER. AT THIS TIME ONLY HORIZONTAL SCATTERING OF THE CLOUD WAS OBSERVED AND APPROXIMATELY AN HOUR AFTER THE DROPPING OF THE REFLECTORS THEY OCCUPIED AN AREA OF SEVERAL SQUARE KILOMETERS.

UNCLASSIFIED

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ABSTRACT/EXTRACT--THIS BEHAVIOR OF THE CLOUD CAN BE ATTRIBUTED TO THE PRESENCE OF A CLOSED CIRCULATION IN THE EVENING HOURS IN THE LOWER LAYERS OF THE ATMOSPHERE. HOWEVER, THIS HYPOTHESIS REQUIRES FURTHER CHECKING. ON CERTAIN DAYS, WHEN THE REFLECTORS WERE DROPPED AT A LOW ALTITUDE, CASES WERE OBSERVED WHEN SOME DIPOLES ROSE TO AN ALTITUDE EXCEEDING THE INITIAL ALTITUDE OF DROPPING, WHICH IS INTERESTING IN ITSELF BECAUSE IT CONFIRMS THE RESULTS OF DOPPLER MEASUREMENTS OF "CLEAR SKY" REFLECTIONS, SHOWING THAT DURING THE DAYTIME HOURS IN THE ATMOSPHERE THERE ACTUALLY WERE STABLE VERTICAL AIR CURRENTS WHOSE SPATIAL SCALE WAS SEVERAL HUNDRED METERS AND THE INTENSITY OF ASCENDING AIR CURRENTS EXCEEDED ONE METER PER SECOND. FACILITY: CENTRAL AEROLOGICAL OBSERVATORY.

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